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(54) Title: MAKE-UP REMOVING COMPOSITIONS COMPRISING STARCH AND A SURFACE ACTIVE AGENT (57) Abstract A cosmetic composition comprising a surface active agent and 5 to 40 wt.% particulate starch can be used to remove make-up. It has sensory properties comparable to cold creams and a foaming capacity comparable to a typical facial wash product on addition of water.		

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MAKE-UP REMOVING COMPOSITIONS COMPRISING STARCH AND A SURFACE ACTIVE AGENT

The present invention relates to a cosmetic composition suitable for topical application to the human-skin, more particularly to a cosmetic composition suitable for both cleansing the skin and removing make-up therefrom.

The topical application to the human-skin, in particular to the face, of substances for cosmetic purposes such as make-up, has long been practised particularly by women as part of an often daily routine to embellish their appearance. Topical application of make-up may also be applied to protect skin treated therewith from the elements , i.e. the sun, wind and rain.

Conventionally such make-up only has a limited life time and should be removed periodically before being reapplied. To habitual users of make-up this is at least a daily activity.

It is obviously desirable that make-up is formulated such that it is strongly adhered to the skin to reduce accidental removal thereof. This is particularly so with wax based make-up such as lipstick and mascara. Removal of make-up by washing with soap and water or with mild detergent products intended for use on human skin is generally ineffective. Whilst make-up can be removed by scrubbing the skin this may damage the sensitive skin on the face.

Oil-based cleansing products such as "cold creams" have been recommended for removing make-up from the skin but the resultant oil residue consisting of a mixture of solubilised make-up and excess cleanser is difficult to remove either by wiping off or rinsing with water. Thus, the user of cold cream will typically need to treat the skin further to remove this residue such as by washing the skin with a soap bar or

with a facial cleanser which are generally high foaming products.

As an alternative, oil-based cleansing compositions comprising a water-dispersible anionic alkali metal C_{10} - C_{18} alkylether, a nonionic partially esterified polyol and an oil substance such as a hydrocarbon have been proposed in EP 486074. According to this citation the composition can be readily removed from the skin by wiping or rinsing with water. A disadvantage with the composition disclosed in EP 486074 is that it can leave the skin feeling greasy and the compositions do not foam.

Another system disclosed in EP 422 862 comprises a surfactant with an HLB of greater than 10 in combination with specific polyalphaolefins and specific carboxylic copolymers. Whilst these products may remove make-up there is no suggestion that they have any foaming capacity with the result that the user will often wash the skin with a separate product after using these make-up removal compositions.

Thus, there continues to be an need for a product which is has improved sensory properties, when compared to prior art cleansers such as cold cream, appearing similar to a skin cream and having a foaming capacity comparable to typical facial wash products.

We have now found that by incorporating starch into a surfactant containing system a composition is obtained which has make-up removal properties comparable to standard make-up removal compositions and which, on rinsing, leaves the skin feeling clean i.e. non-greasy.

Accordingly, the invention provides a cosmetic composition comprising a surface active agent and 5 to 40 wt% particulate starch.

5 The advantage of the composition according to the invention is that it is a dual functional system providing both make-up removal and skin cleansing. It has properties which, in use, are perceived as similar to a skin cream and, on addition of water, produces a foam comparable to facial wash products
10 which generally are poor at removing make-up. Surprisingly we have found a class of hydrophilic materials i.e. starch which give the tactile properties of a skin cream containing foam suppressant hydrophobic materials.

15 The particulate starch can be selected from any standard non-modified plant starch such as maize, waxy corn, wheat, rice, tapioca, potato, sweet potato, sago starch and mixtures thereof.

20 The starch will preferably be incorporated in the cosmetic composition of the invention as a dry powder to a solution or dispersion of the surface active agent. The starch is added at a temperature below its gelatinization temperature. The diameter of the starch granules will vary in the range 2 to
25 150 μm , depending on the type of starch used; rice starch has the smallest granules and potato starch the largest.

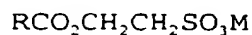
Preferably the cosmetic composition will comprise 8 to 35 wt% particulate starch.

30 The composition in accordance with the present invention also comprises a surface active agent as an essential component, preferably in an amount 1 to 60 wt%, most preferably 5 to 30 wt%.

The starch is added at a temperature below its gelatinization temperature.

The surface active agent can be selected from any known surfactant suitable for topical application to the human body and is agent selected from anionic, nonionic, zwitterionic and cationic surfactants, soap and mixtures thereof. Mild surface active agents, ie. surfactants which do not damage the stratum corneum, the outer layer of skin, are particularly preferred.

One preferred anionic detergent is a fatty acyl isethionate of formula:



where R is an alkyl or alkenyl group of 7 to 21 carbon atoms and M is a solubilising cation such as sodium, potassium, ammonium or substituted ammonium. Preferably at least three quarters of the RCO groups have 12 to 18 carbon atoms and may be derived from coconut, palm or a coconut/palm blend.

Another preferred anionic detergent is alkyl ether sulphate of formula:



where R' is an alkyl group of 8 to 22 carbon atoms, n ranges from 0.5 to 10 especially 1.5 to 8, and M is a solubilising cation as before.

Other possible anionic detergents include alkyl glyceryl ether sulphate, sulphosuccinates, taurates, sarcosinates, sulphoacetates, alkyl phosphate, alkyl phosphate esters and acyl lactylate, alkyl glutamates, uronic acid derivatives and mixtures thereof.

Sulphosuccinates may be monoalkyl sulphosuccinates having the formula: $R^5O_2CCH_2CH(SO_3M)CO_2M$; and amido-MEA sulphosuccinates of the formula: $R^5CONHCH_2CH_2O_2CCH_2CH(SO_3M)CO_2M$; wherein R^5 ranges from C_8 - C_{20} alkyl, preferably C_{12} - C_{15} alkyl and M is a solubilising cation. Modified sulphosuccinate such as disodium citric acid polyethoxy lauryl ether sulphosuccinate (Rewopol SB CS 50 ex Witco) are also suitable.

Sarcosinates are generally indicated by the formula:

$R^5CON(CH_3)CH_2CO_2M$, wherein R^5 ranges from C_8 - C_{20} alkyl, preferably C_{12} - C_{15} alkyl and M is a solubilising cation.

Taurates are generally identified by the formula:

$R^5CONR^6CH_2CH_2SO_3M$, wherein R^5 ranges from C_8 - C_{20} alkyl, preferably C_{12} - C_{15} alkyl, R^6 ranges from C_1 - C_4 alkyl, and M is a solubilising cation.

Harsh surfactants such as primary alkane sulphonate or alkyl benzene sulphonate will generally be avoided.

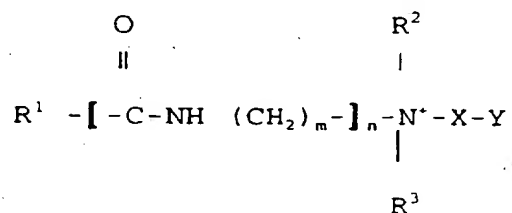
Suitable nonionic surface active agents include alkyl polysaccharides, lactobionamides, ethyleneglycol esters, glycerol monoethers, polyhydroxyamides (glucamide), primary and secondary alcohol ethoxylates, especially the C_{8-20} aliphatic alcohols ethoxylated with an average of from 1 to 20 moles of ethylene oxide per mole of alcohol.

If the surface active agent comprises soap, the soap is preferably derived from materials with a C_8 to C_{22} ,

substantially saturated, carbon chain and, preferably, is a potassium soap with a C_{12} to C_{18} carbon chain.

Mixtures of any of the foregoing surface active agents may also be used.

It is also preferable that the composition includes from 0.5 to 15 wt% of a cosurfactant agent with skin-mildness benefits. Suitable materials are zwitterionic detergents which have an alkyl or alkenyl group of 7 to 18 carbon atoms and comply with an overall structural formula



where R¹ is alkyl or alkenyl of 7 to 18 carbon atoms
R² and R³ are each independently alkyl, hydroxyalkyl or carboxyalkyl of 1 to 3 carbon atoms

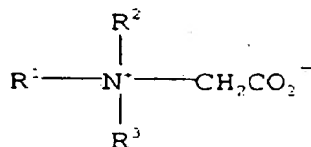
m is 2 to 4

n is 0 or 1

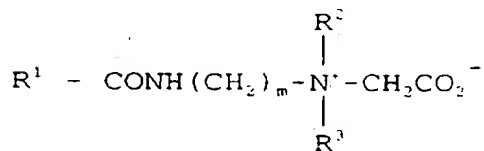
X is alkylene of 1 to 3 carbon atoms optionally substituted with hydroxyl, and

Y is -CO₂⁻ or -SO₃⁻

Zwitterionic detergents within the above general formula include simple betaines of formula:



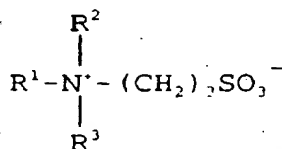
and amido betaines of formula:



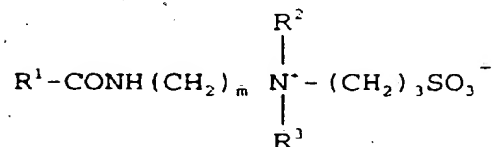
where m is 2 or 3.

In both formulae R^1 , R^2 and R^3 are as defined previously. R^1 may, in particular, be a mixture of C_{12} and C_{14} alkyl groups derived from coconut so that at least half, preferably at least three quarters of the groups R^1 have 10 to 14 carbon atoms. R^2 and R^3 are preferably methyl.

A further possibility is a sulphobetaine of formula:

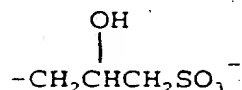


or



where m is 2 or 3, or variants of these in which

$-(CH_2)_3SO_3^-$ is replaced by



R^1 , R^2 and R^3 in these formulae are as defined previously.

The composition according to the invention may contain one or more optional components.

One particularly preferred group of components are those abrasive materials commonly used in exfoliant compositions intended for the topical application to the skin. Materials include minerals having a Moh hardness of 1 to 6 such as calcite, polyethylene beads and expandable thermoplastic microspheres as described in EP 486080 incorporated herein by reference and sold under the Expancel trade name (ex Nobel Industries). Such materials may be present at levels within the range 0.1 to 15 wt%.

Another particularly preferred optional component is a hydrotrope. The hydrotrope as herein defined is a water-soluble molecule which influences the phase behaviour of the surfactant solution making it more stable to climatic variation e.g. freeze-thawing.

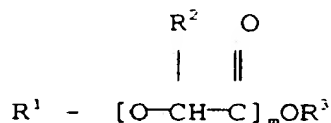
Particularly preferred materials include anionic aromatic sulphonates such as sodium toluene sulphonate; sodium xylene sulphonate cumene; ethanol; urea; and glycerol. Such a hydrotrope will preferably be present in an amount within the range 0.5 to 15 wt% most preferably 1 to 10 wt%. An advantage of including a hydrotrope such as, in particular, glycerol is that it improves the sensory properties of the composition making it feel, in use, more like a skin cream than a traditional make-up removal composition which is perceived as a sticky/greasy composition.

Other particularly preferred optional components are cosmetic benefit agents such as:-

- a) waxes such as, beeswax, lanolin and derivatives thereof;
- b) hydrophobic plant extracts;
- c) hydrocarbons such as petrolatum, squalene and squalane;
- d) higher fatty acids such as those having 8 to 24 carbon atoms, for example, lauric, myristic, palmitic, stearic, behenic, linolenic, and isostearic fatty acid;
- e) higher fatty alcohols such as those having 8 to 24 carbon atoms, for example, laurel, cetyl, stearyl, oleyl, behenyl, and 2-hexadecanol alcohol;
- f) esters such as cetyl octanoate, laurel lactate, myristyl lactate, cetyl lactate, isopropyl myristate, myristyl myristate, isopropyl palmitate, isopropyl adipate, butyl stearate, decyl oleate, cholesterol isostearate, glycerol monostearate, glycerol distearate, glycerol tristearate, alkyl lactate, alkyl citrate and alkyl

tartrate;

- g) essential oils such as mentha, jasmine, camphor, white cedar, bitter orange peel, ryu, turpentine, cinnamon, bergamont, citrus unshiu, calamus, pine, lavender, bay, clove, hiba, eucalyptus, lemon, starflower, thyme, peppermint, rose, sage, menthol, cineole, eugenol, citral, citronelle, borneol, linalool, geraniol, evening primrose, camphor, thymol, spirantol, pinene, limonene and terpenoid oils;
- h) lipids such as cholesterol, ceramides, sucrose esters and pseudo-ceramides as described in European Patent Specification No. 556 957;
- i) vitamins such as vitamins A and E, and vitamin alkyl esters, including vitamin C alkyl esters;
- j) sunscreens such as octyl methoxyl cinnamate (Parsol MCX) and butyl methoxy benzoylmethane (Parsol 1789);
- k) Phospholipids; and
- l) derivatives of alpha hydroxy acids such as materials of formula



wherein

R^1 is $\text{C}_p\text{H}_q\text{N}_r\text{O}_s$, where p is 0-20, q is 1-41, r is 0-3, and s is 0-3;

R^2 is C_tH_u where t is 0-20 and u is 1-41;

R^3 is $\text{C}_v\text{H}_w\text{N}_x\text{O}_y$ where v is 0-20, w is 1-41, x

is 0-3 and y is 0-3 or a metallic, ammonium or alkanolammonium anion; and m is 1-10;

m) perfumes; and

n) mixtures of any of the foregoing components.

Such benefit agents may be present in amount from 0.05 to 10 preferably 0.1 to 5 wt% based on the composition.

Although the compositions of the invention may be self-structuring generally they will comprise a structurant and/or a thickener in an amount of less than 5 wt%. Suitable materials include swelling clays, for example laponite; fatty acids and derivatives thereof and, in particular, fatty acid monoglyceride polyglycol ethers; cross-linked polyacrylates such as Carbopol (TM) (polymers available from Goodrich); acrylates and copolymers thereof, polyvinylpyrrolidone and copolymers thereof; polyethylene imines; natural gums including alginates, guar, xanthan and polysaccharide derivatives including carboxy methyl cellulose and hydroxypropyl guar; propylene glycols and propylene glycol oleates; salts such as sodium chloride and ammonium sulphate; sucrose esters; gellants; and mixtures thereof.

Of the clays, particularly preferred are synthetic hectorite (laponite) clay used in conjunction with an electrolyte salt capable of causing the clay to thicken. Suitable electrolytes include alkali and alkaline earth salts such as halides, ammonium salts and sulphates; and mixtures thereof.

Further examples of structurants and thickeners are given in the International Cosmetic Ingredient Dictionary, Fifth Edition, 1993, published by CTFA (The Cosmetic, Toiletry & Fragrance Association), incorporated herein by reference.

Other components which may be included in the cosmetic compositions include anti-viral agents; hydroxycaprylic acids; pyrrolidone; carboxylic acids; 3,4,4'-trichlorocarbanilide; benzoyl peroxide; germicides and insect repellents such as 2,4,4'-trichloro-2'-hydroxydiphenyl ether (Irgasan DP300); salicylic acid; willow extract, N,N-dimethyl m-toluamide (DEET); opacifiers, preferably present in an amount 0.2 to 2.0 wt%; preservatives, such as 2-Bromo-2-nitropropane-1,3-diol, methyl paraben or a mixture of

sorbic acid and potassium sorbate, preferably present in an amount of 0.2 to 2.0 wt%.

5 The cosmetic composition of the invention can take the form of a liquid, cream or lotion preferably with a viscosity in the range 10 to 500 Pas. at a shear rate of $1s^{-1}$. The composition can be packaged in a suitable container from which it can be dispensed directly onto the skin or via an applicator.

10 When the product is in the form of a liquid it may be dispensed directly onto the skin such as, for example, by a finger-operated pump delivering product onto the skin or by application to a cotton pad which is then used to wipe the skin.

15 If the product is in the form of a cream it may be applied to the skin by massaging or rubbing it into the skin with the fingers.

20 On rubbing the compositions of the invention into the skin and on addition of water it lathers. It is then rinsed off with water or wiped off the skin.

25 The invention also provides a process for the preparation of a cosmetic composition which comprises adding dry particulate starch to a solution or dispersion of the surface active agent at a temperature below its gelatinization temperature. Thereafter, any optional components are added.

30 The invention will be further illustrated by reference to the following non-limiting examples.

EXAMPLES

In the examples:-

- 5 Calcite was Durcal, diameter \leq 20 microns
CAPB (cocoamidopropyl betaine) was Tegobetaine CK ex
Goldschmidt.
Cholesterol was Cholesterol USP ex Croda.
Glycerol was Pricerine 9081 ex Unichema.
- 10 Lauric acid was NAA122 ex Nippon Oil & Fat
Myristic acid was NAA142 ex Nippon Oil & Fat
Oleic acid was Extra Olein 80R
Polyethylene was oxidised polyethylene 629-A ex Allied
Signal.
- 15 SLES (sodium lauryl ether (3EO) sulphate) was Elfan NS2435 ex
Akzo.
Starch was maize starch or rice starch from BDH.
Stearic acid was NAA175 ex Nippon Oil & Fat (formulation A)
or Prifac 2980 ex Unichema (formulation B)
- 20 Sodium cocoyl isethionate was Jordopon CIUP ex Unichema
Sucrose fatty ester was Ryoto S-270 ex Mitsubishi-Kasei
Thermoplastic microspheres are sold under the Exapancel trade
name ex Nobel Industries.
- 25 Three different product bases, formulations given below, were
prepared and used in the following examples.

Formulation A% wt

	Lauric acid	1.45
	Myristic acid	0.65
5	Stearic acid	0.25
	Oleic acid	1.70
	KOH	0.91
	Cocoamidopropyl betaine (CAPB)	4.95
10	Ethylene diaminetetra acetate (EDTA)	0.05
	Sodium chloride	4.50
	Cholesterol	0.02
	Sucrose fatty ester	0.01
	Preservative, perfume, water	to 100

15

This was prepared by mixing the fatty acids, water and EDTA and heating to 80°C in one vessel. Thereafter the cholesterol was added.

20

In a second vessel the CAPB and preservative were heated to 80°C.

25

KOH, as a 50% solution, was added to the molten fatty acid dispersion with stirring followed by the contents of the second vessel, salt and the sucrose fatty ester. The mixture was cooled to ambient temperature before the remaining ingredients were added.

Formulation B% wt

	Sodium lauryl ether (3 EO) sulphate (SLES)	5.0
	CAPB	10.0
5	Sodium cocoyl isethionate	5.0
	Stearic acid	3.0
	Glycerol	2.0
	Polyethylene glycol, Molecular Weight 400	1.0
	Polypropylene glycol	20.0
10	Preservative, perfume, minors and water	to 100

This was prepared by heating water to 70°C and adding to it SLES and CAPB with stirring. Glycerol, PEG 400, polypropylene glycol, preservative, perfume were then added to the resultant hot mixture followed by melted stearic acid. The resultant mixture was allowed cool whilst being stirred with a Janke and Kunkel IKA mixer.

Formulation C% wt

20	SLES	12.6
	CAPB	3.16
	Maize Starch	31.6
	NaCl	2.1
25	Perfume, minors and water	to 100

SLES and CAPB were mixed with excess water and heated. The resultant mixture was cooled to room temperature and the remaining components added. The corn starch was added as a dry powder in aliquots of 5 g.

For comparison purposes, the effectiveness of a commercially available washable cold cream, formulation given below, in removing make-up was also tested.

	<u>Washable Cold Cream</u>	<u>% wt</u>
	Liquid petrolatum	45.5
	Paraffin	2.0
5	Fatty acid	0.5
	Silicone	1.0
	Fatty alcohol	2.0
	Polyethoxylated fatty ethers	10.3
	Perfume, preservative, minors	to 100%
10	and water	

The following procedure was employed to assess the effectiveness of the cosmetic compositions according to the invention in removing make-up.

15 Rimmel Colour Plus lipstick (Truly Red) was applied in three patches to a forearm (each 3 cm x 2 cm). The colour of the skin within each area was recorded using a Minolta Chroma Meter CR-100 to give a set of baseline readings (A). (The
20 instrument measures colour coordinates according to CIELAB Colour space (Kirk Othmar, Enclycropaedia of Chemical Technology Fourth Edition, page 855)). Six measurements were made over each area to give an average value.

25 The designated areas were then coated with the test lipstick, which was applied in a standard way to ensure that approximately equal weights of make-up were transferred (average 7 mg per site). After drying, a second colour measurement was made (reading B).

30 A standard amount of test product (0.2 ml or equivalent weight) was applied to the skin, a different product being used on each make-up patch. The cleanser was rubbed into the make-up for 40 rubs (20 seconds), using light finger pressure
35 (gloved hand), after which the mixture was immediately rinsed

off with running tap water at a fixed flow rate and temperature (6 1/2 min; 35°C).

After all three patches had been similarly treated, the arm was dried with a hair drier and final colour measurements were made (reading C).

The percentage make-up removal is calculated as:
$$\frac{B - C}{B - A} \times 100$$

where $B - A = \sqrt{(L_B - L_A)^2 + (a_B - a_A)^2 + (b_B - b_A)^2}$
and

$$B - C = \sqrt{(L_B - L_C)^2 + (a_B - a_C)^2 + (b_B - b_C)^2}$$

where L_B is the L value for measurement B

L_C is the L value for measurement C

L_A is the L value for measurement A

a_B is the a value for measurement B

a_C is the a value for measurement C

a_A is the a value for measurement A

b_B is the b value for measurement B

b_C is the b value for measurement C

b_A is the b value for measurement A

The amount of foam produced was measured by the following method in which 20 panellists were used. Each panellist worn a pair of surgical gloves which were turned inside out. The gloved hands were washed with soap to remove the talc and then rinsed with water. 0.5 g of product was applied to a gloved hand of each panellist. Lather was generated by rubbing the hands together for 40 seconds. An inverted funnel connected to a measuring cylinder was placed in a sink

of water at ambient temperature. Immediately after the lather had been generated the panellist placed their hands under the funnel, whereby foam floated off into the funnel. The hands were then removed before the position of the measuring cylinder in the sink was adjusted so that the zero point was level with the water level. The amount of foam generated was measured off from the measuring cylinder.

5

The following results were obtained.

		<u>Examples</u>	<u>Formulation</u>	<u>Make-up</u> <u>% Removal</u>	<u>Foam</u> <u>Height/ml</u>
5	1*		100%A	32.0	55.8
	2		90.9%A + 9.1% maize starch	47.2	-
	3		83.3%A + 16.7% rice starch	63.5	-
10	4		76.9%A + 23.1% maize starch	68.6	-
	5		76.9%A + 15.4% maize starch + 7.7% calcite	75.8	-
15	6*		100%B	49.3	61.4
	7		90.9%B + 9.1% maize starch	66.7	-
	8		83.3%B + 16.7% maize starch	73.7	62.9
20	9		83.3%B + 16.7% rice starch	65.8	-
	10		76.9%B + 23.1% maize starch	66.3	-
	11		80%B + 16% maize starch + 4% calcite	82.7	-
25	12		95%C + 5% demin. water	76.2	-
	13		95%C + 5% poly- ethylene	95.4	49.9
30	14		95%C + 1.25% thermoplastic microspheres + 3.75 demin water	87.6	-
	15		100% washable cold cream	69.8	-

35 * comparative examples

In the examples based on formulations A and B the starch and calcite were mixed into the bases as dry powders.

5 The results demonstrate that the presence of starch in the formulation improves the cleansing ability of the formulations to a level where it is comparable with a commercially available washable cold cream. The presence of an abrasive such as calcite improves the efficiency of make-removal still further. Furthermore, the compositions
10 according to the invention all produce significant foam whereas the washable cold cream will rinse off the skin but not foam. A comparison of examples 6 and 7 shows that the starch containing composition, despite only containing 80wt% of the level of surfactant in example 6, shows no loss in
15 foam capacity i.e. addition of starch does not have a detrimental effect on foam production.

CLAIMS

1. A liquid cosmetic composition for removing make-up comprising a surface active agent and 5 to 40 wt% particulate starch.
2. A cosmetic composition according to claim 1 wherein the starch is selected from maize, waxy corn, wheat, rice, tapioca, potato, sweet potato, sago starch and mixtures thereof.
3. A cosmetic composition according to claim 1 wherein the surface active agent is present in an amount from 1 to 60 wt% and is selected from anionic, nonionic, zwitterionic and cationic surface active agents; soap and mixtures thereof.
4. A cosmetic composition according to claim 1 further comprising an abrasive material.
5. A cosmetic composition according to claim 1 further comprising a hydrotrope.
6. A cosmetic composition according to claim 1 further comprising a cosmetic benefit agent selected from waxes, hydrophobic plant extracts, higher fatty acids, higher fatty alcohols, esters, essential oils, lipids, vitamins, sunscreens, phospholipids, derivatives of alpha hydroxy acids, perfumes and mixtures thereof.
7. Use in a make-up removal composition of
 - a) a surface active agent and
 - b) 5 to 40 wt% particulate starch.

8. A method of removing make-up and cleansing the human skin comprises

- a) contacting the skin with a cosmetic composition comprising a surface active agent and 5 to 40 wt% particulate starch; and
- b) adding water.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 97/00203

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61K7/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 580 493 A (L'OREAL) 24 October 1986 see page 5, line 5; claim 1 ---	1,3
A	EP 0 141 732 A (L'OREAL) 15 May 1985 see claim 1 ---	1
A	GB 1 304 375 A (L'OREAL) 24 January 1973 see claims 1-3 ---	1
P,A	EP 0 745 379 A (L'OREAL) 4 December 1996 see claims 1,16,20 -----	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

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- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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- *&* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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